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A HIGH ANDEAN NEW SPECIES OF *TERRA* (LEPIDOPTERA, LYCAENIDAE)

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Abstract.—*Terra altilineata,* new species, is described from a small spring-fed oasis isolated in high montane arid terrain (3,500–3,650 m), Jujuy Province, Argentina. Several other undescribed butterflies are endemic to this site.

I recently revised the Neotropical hairstreak butterfly genera *Nesiostrymon* Clench and *Terra* Johnson and Matusik (Theclinae, Eumaeini) (Johnson, 1991a). Both genera occur throughout the mainland neotropics and in the Greater Antilles and, as revised, included five and six respective species. Neither genus contained a high Andean representative, though *Nesiostrymon australivaga* Johnson was described from low latitude scrub-steppe in Mendoza Province, Argentina. Subsequently, a new species of *Terra* was collected in isolated high montane habitat, Jujuy Province, Argentina, at altitudes over 2,000 meters higher than any previously known congener. This distinctive new species is described below, following on the generic diagnosis of Johnson and Matusik (1988) and Johnson (1991a).

Terra altilineata, new species
Figs. 1A, 2B

Diagnosis. Hindwing under surface with thin lineal black medial band (congeners exhibit lunulate yellow, or wide lineal red or yellow-brown, medial bands); male forewing upper surface with narrowly elliptic black androconial "brand" (*sensu* Eliot, 1973) contrasting lighter brown apical wing color (lowland Argentina congener *T. cana* (Hayward) with black wing apices in both sexes, obscuring dark ovate androconial brand in males). Valvae of male genitalia with distinctive lateral shoulders.

Description. *Male.* Upper Surface of Wings: ground color of both wings dusted light silvery blue; forewing with brown apices contrasted by black elliptic brand at distal end of discal cell; hindwing with thin white line along margin, adjacent hairlike tails at termini of veins CuA1 and CuA2. Under Surface of Wings: ground color of both wings concolorous gray; forewing with dull gray lineal band across postmedial area; hindwing with thin, undulate, black band across medial area; limbal area with small black marginal spot in cell CuA1. Length of forewing: 11.0–12.5 mm. *Female.* Unknown. *Male Genitalia.* Figure 2B (congeners, Johnson, 1991a, figs. 59, 69–80, and as noted below). Terminal tergites typical of genus but brush organs uniquely absent. Genitalia with vinculum typical of genus but saccus stouter, terminus flattened; aedeagus elongate as in congeners but with heavily sclerotized, basally pronglike, terminus; valvae shouldered with distinctively elliptic sclerotized elements (Fig. 2, B5y), each bordered inwardly by slight ventral ridge extending caudally beneath the terminal microtrichia otherwise characteristic of the genus (Fig. 2, A1x; B3x).

Fig. 1. Adults of *Terra altilineata* (A): holotype, upper surface right, under surface left; and *T. cana* (B): same aspects, male (Tucumán Prov, Dept. Yerba Buena, Rte. 338, km post 15, Cumbres San Javier, 700 m, 8 February 1991), AMNH.

Types. Holotype male (forewing 11.0 mm) (Fig. 1A), Quebrada de las Cruces, Dept. Tilcara, Jujuy Province, Argentina, 3,500 m, 1,130 hr, February 2, 1991, in boulder-strewn, dry wash some 100 m south of small spring-fed oasis (see Remarks); deposited American Museum of Natural History (AMNH). Paratypes. Same data as holotype, two males deposited Instituto Miguel Lillo, Tucumán, Argentina.

Distribution. Currently known only from type locality (see Remarks).

Remarks. *Habitat.—T. altilineata* is currently known from a boulder-strewn dry wash approximately 100 m south of a long, narrow, spring-fed oasis within "Quebrada de las Cruces" (found on most Jujuy Province topographic maps about 5 km W of Huacalera village [2,700 m, see site description 53A, Johnson et al., 1990]). On the sampling date, extent of oasis vegetation was approximately 2 km by 30 m along spring-fed rivulets extending from 3,500–3,650 m altitude, km 8–10, of the "Abra de las Cruces" footpath (known to most local residents and originating from the road leading south from the east end of Huacalera's Rio Grande River bridge). The larval foodplant of *T. altilineata* probably occurs in the oasis; however, the type specimens were collected in the adjacent unvegetated wash. Other butterflies were observed some 100–200 m from the oasis, including various Lycaenidae (Theclinae, Polyommatinae) and Hesperiidae "mud-puddling" at rivulets up to 100 m north of the dry arroyo bed. In certain years, small spring- and snow-fed lakes or marshes occur about 5 km north and upland from the oasis (the "Lagunas de las Cruces" of most maps, 4,250 m). Thus, more extensive vegetation apparently occurs at certain times along the quebrada footpath upland of 3,500 m. In 1991 the "lagunas" were dry; aside from occasional upland xerophiles of the Pieridae and Satyridae, few butterflies were observed there. Robert C. Eisele (Jujuy, Argentina, pers. comm.) reports the 1991 sampling at Quebrada de las Cruces as the second known visit there by lepidopterists. To date, three other undescribed species of butterflies, two Lycaenidae and one Satyridae (all of uncertain generic assignment) are known only from this isolated locality. Johnson (1992) placed one new thecline from the oasis in a new genus (*Shapiroana matusikorum*). It is the southernmost member of a group occurring at very high altitudes north to the Sierra Nevada de Santa Marta of Colombia.

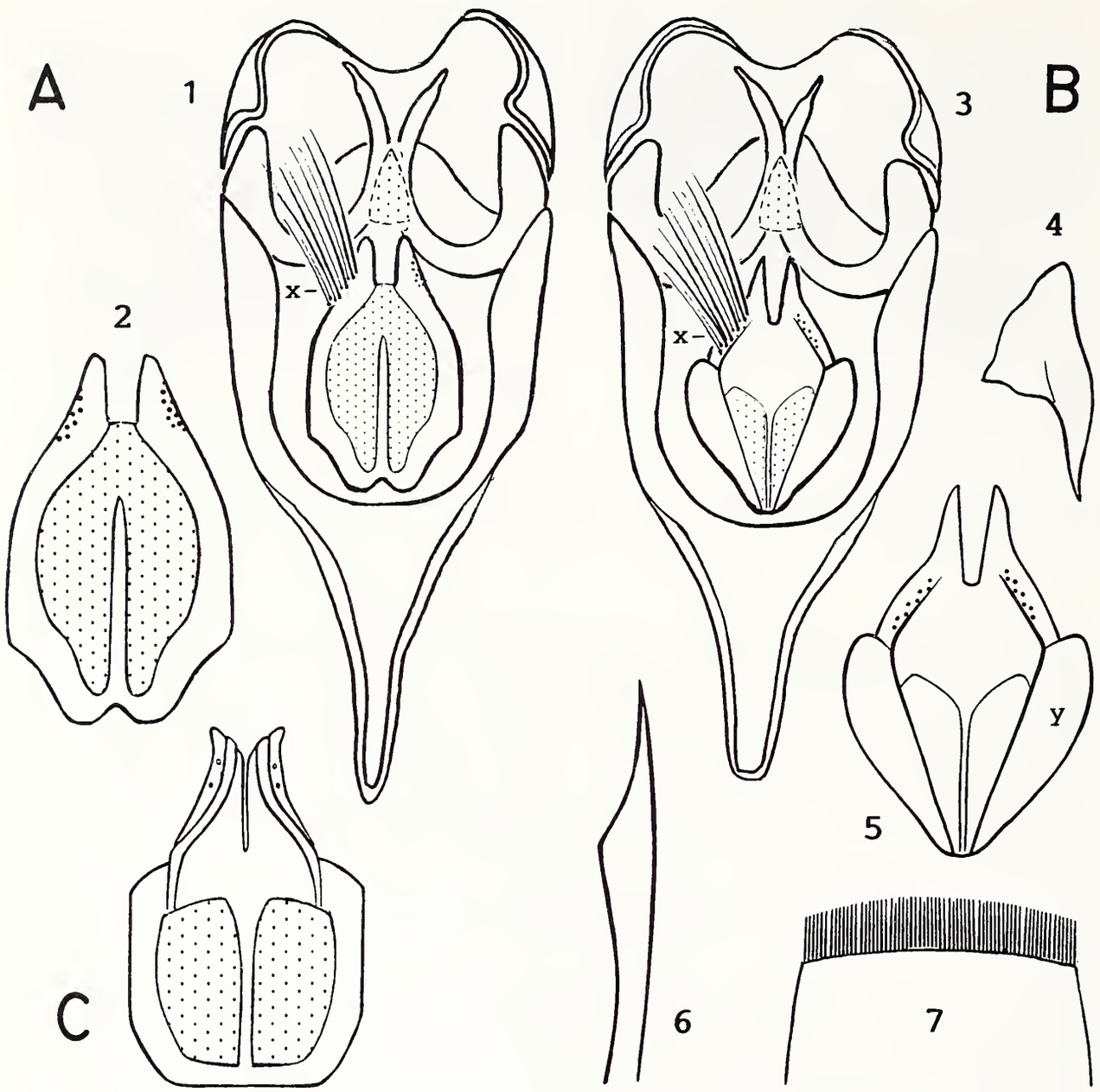

Fig. 2. Male genitalia of *Terra altilineata, T. cana* and *T. andevaga* (showing aspects illustrated and described in generic revision, Johnson, 1991a). A. *T. cana,* 1, genitalia (ventral view, x, terminal microtrichia); 2, valvae enlarged (ventral view). B. *T. altilineata,* 3, genitalia (ventral view, x, terminal microtrichia); 4, valvae, lateral view; 5, valvae enlarged (ventral view, y, distally shouldered element); 6, aedeagus terminus, lateral view; 7, terminal tergite, dorsal view. C. *T. andevaga,* valvae enlarged (ventral view). Stipples, areas of generally transparent sclerotization.

Congeners and phylogenetic position.—Regional congener *Terra cana* (Fig. 1B) is restricted to dense wet deciduous forest (700–1,250 m) in Tucumán and Jujuy provinces (Hayward, 1949, 1973; Johnson, 1991a). Contrasting *T. altilineata* on the hindwing under surface, *T. cana* has disjunct lunulate yellow-orange bands, an adjacent orange-bordered discal slash or line in cells RS and/or CuA1, and lunulate orange marginal spot in cell CuA1. Also, the forewing upper surface of *T. cana* exhibits wide blackish apices which obscure the usual distinction of the sexes by the males' dark forewing brand (Hayward, 1949, 1973; Johnson, 1991a, figs. 45, 47). The forewing brand in *T. altilineata* appears thinly elliptic and black against much

lighter brown wing apices, a condition typical of many other eumaeines (like taxa of species rich *Strymon* Hübner [Johnson et al., 1991]) but less like members of *Terra, Nesiostrymon* or their six immediate outgroup genera (Johnson, 1991b) with their mostly diffusive brands. Male genitalia in *T. cana* have brush organs attached along the vincular dorsum and, contrasting *T. altilineata,* exhibit an elongate saccus and terminally blunted aedeagus. Valvae of *T. cana* (Fig. 2A) are elliptic and of generally even contour, lacking any prominently shouldered elements. Valvae of *T. altilineata* only slightly resemble those of *T. andevaga* Johnson (TL submacrothermic rain forest, Pinchincha Dept., Ecuador, 1,325 m) which exhibit a robust, rather square, base contrasting short caudal extensions (Fig. 2C; Johnson, 1991a, fig. 74).

Considering cladograms of *Terra* and *Nesiostrymon* (Johnson, 1991b, fig. 1, 2, tables 1–4), the phylogenetic position of *T. altilineata* is obscured by the preponderance of female structural characters used in constructing the *Terra* ingroup cladogram. Geographic distributions of *Terra* species are greatly disjunct and interspecific differences in male genitalia (particularly valvae) do not reflect the intrageneric groupings suggested by wing stripe coloration and female genitalia. If, however, one assumes *T. altilineata* is part of the clade of *Terra* species restricted to South America (Johnson, 1991b, fig. 2, clade F), the following observations are consistent with character polarities recently attributed to the two genera.

For *T. altilineata*: (1) thin black under surface bands are a retained primitive character (consistent with the condition in *Nesiostrymon* and the reduced bands of the plesiotypic Antillean endemic *Terra hispaniola* Johnson and Matusik); (2) widely shouldered valvae are most likely autapomorphic (non-homologous with distally lobate, ventrally multiplanar, conditions characterizing valvae of *Nesiostrymon* since, as typical of all *Terra* species, the valval ventrum in *T. altilineata* is of even contour [Fig. 2, B4]).

Etymology. The name combines the Latin roots for high (altus) and line (linea), referring to the high montane habitat and lineal under surface bands typifying the species.

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